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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,980	02/09/2004	Luc Vanmaele	27500-GN03027	9601
7590	11/28/2006			EXAMINER LEE, SIN J
Joseph T. Guy Ph.D. Nexsen Pruet Jacobs & Pollard LLP 201 W. McBee Avenue Greenville, SC 29603			ART UNIT 1752	PAPER NUMBER

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,980	VANMAELE ET AL.	
	Examiner	Art Unit	
	Sin J. Lee	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 September 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-6,10-16,18-24,26-45,47-53,55 and 59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 13,14,26-45,47-53,55 and 59 is/are allowed.
- 6) Claim(s) 1,3-6,10-12,15,16 and 18-24 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/5/06.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

1. Applicants canceled claims 2, 7-9, 17, 25, 46, 54, and 56-58.
2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1, 3-6, 10-12, 15, 16, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Figov (5,623,001) in view of Nguyen (US 6,270,561 B1).

Figov teaches UV curable ink-jet inks for continuous ink-jet printing and drop on demand ink-jet printing (see abstract). In Example IV, Figov's UV curable ink-jet ink composition contains polyethylene glycol diacrylate oligomer (Ebecryl 11), deionized water (as a solvent), a photoinitiator (2-hydroxy-2-methyl-1-phenylpropane-1-one) and 5.4wt.% (based on the total weight of the composition excluding solvent) of pigment

(naphtol blue black) (**even if naphtol blue black were dye, Figov teaches the equivalence of a dye and a color pigment (see col.3, lines 24-28). Thus, one skilled in the art would immediately envisage using a color pigment instead of naphtol blue black in Example IV.**) Figov also teaches (col.4, lines 33-34) that his composition can contain synergists and stabilizers. Figov does not teach present POSS. Nguyen, which teaches an ink composition for inkjet printing applications, teaches the use of a POSS (such as those shown in col.3, lines 24-67, col.4, lines 1-7) in ink vehicle to provide excellent mechanical properties and non-tacky printed images (see col.3, lines 9-19). Specifically, in Example 2, Nguyen teaches POSS which is substituted by aniline group, and as taught by Nguyen, *aniline group is a reactive moiety which is crosslinkable and polymerizable* (see col.4, lines 16-23) (thus, Nguyen teaches present POSS comprising at least one R group comprising a curable functional group). Therefore, it would have been obvious to one skilled in the art to add Nguyen's POSS substituted by aniline group into Figov's ink-jet ink composition in order to bring excellent mechanical properties and non-tacky printed images. Therefore, Figov in view of Nguyen render obvious present inventions of claims 1, 3-6, 10-12, 15, 16, 18, 23 and 24.

5. Claims 1, 3-6, 10-12, 15, 16, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mantell et al (5,641,346) in view of Nguyen (US 6,270,561 B1).

Mantell teaches an ink jet ink containing a colorant and a liquid component containing at least one of an epoxy and a vinyl ether. Mantell also teaches an ink jet

recording process including the steps of ejecting an ink jet ink from an orifice to form an image on a recording medium (see abstract). Specifically, in Example 2, Mantell teaches an ink composition containing ethylene glycol monovinyl ether (a curable component), water, 5 wt.% of Neptune black. Mantell also teaches the use of a photoinitiator in his composition (see claim 4). Mantell does not teach present POSS. Nguyen, which teaches a ink composition for inkjet printing applications, teaches the use of a POSS (such as those shown in col.3, lines 24-67, col.4, lines 1-7) in ink vehicle to provide excellent mechanical properties and non-tacky printed images (see col.3, lines 9-19). *Specifically, in Example 2, Nguyen teaches POSS which is substituted by aniline group, and as taught by Nguyen, aniline group is a reactive moiety which is crosslinkable and polymerizable* (see col.4, lines 16-23) (thus, Nguyen teaches present POSS comprising at least one R group comprising a curable functional group). Therefore, it would have been obvious to one skilled in the art to add Nguyen's POSS substituted by aniline group into Mantell's ink-jet ink composition in order to bring excellent mechanical properties and non-tacky printed images. Therefore, Mantell in view of Nguyen render obvious present inventions of claims 1, 3-6, 10-12, 15, 16, 18, 23 and 24.

6. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Figov (5,623,001) or Mantell et al (5,641,346) in view of Nguyen et al (US 6,270,561 B1) as applied to claim 1 above, and further in view of Kamata et al (6,110,987).

Although Figov or Mantell does not explicitly state the use of an antioxidant or a conductive material, those materials are well known in the art as common additives

used in a photocurable composition, as evidenced by Kamata, col.15, lines 29-34 (besides, Nguyen also teaches the use of an antioxidant – see claim 2). It would have been obvious to one skilled in the art to add additives commonly used in a photocurable composition, such as antioxidant and conductive material, into Figov's or Mantell's *photocurable ink* composition. Therefore, Figov or Mantell in view of Nguyen and further in view of Kamata render obvious present inventions of claims 19-21.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Figov (5,623,001) or Mantell et al (5,641,346) in view of Nguyen et al (US 6,270,561 B1), and further in view of Nguyen et al (6,664,024 B1).

As discussed above in Paragraphs 4-5, Figov or Mantell in view of Nguyen teach present invention of claim 22 except for present dendrimer. Nguyen et al'024 teaches that photocurable monomers, oligomers, dendrimers are interchangeably used in a photocurable composition (see col.2, lines 44-60). Therefore, it would have been obvious to one skilled in the art to use a photocurable dendrimer (instead of monomers or oligomers) in Figov's or Mantell's photocurable composition because photocurable monomers, oligomers, and dendrimers were art-known equivalents at the time the invention was made. Therefore, Figov or Mantell in view of Nguyen'561 and further in view of Nguyen et al'024 would render obvious present invention of claim 22.

Allowable Subject Matter

8. Claims 13, 14, 26-45, 47-53, 55 and 59 are allowed. None of the cited prior arts teaches or suggest the use of present vinylether (meth)acrylates of claims 13, 42 and 55 nor the present POSS compounds of claim 59.

Response to Arguments

9. Applicants argue that Figov's naphtol blue black is not a pigment but a dye. However, as already discussed above, even if naphtol blue black were dye, since Figov teaches the equivalence of a dye and a color pigment (see col.3, lines 24-28), one skilled in the art would immediately envisage using a color pigment instead of naphtol blue black in Figov's composition of Example IV. Applicants also argue that Nguyen does not teach present POSS having a curable functional group. However, as discussed above, Nguyen specifically teaches POSS which is substituted by aniline group, and as taught by Nguyen, aniline group is a reactive moiety which is crosslinkable and polymerizable (see col.4, lines 16-23). Thus, Nguyen teaches present POSS comprising at least one R group comprising a curable functional group (Nguyen also teaches poly(styrylPOSS-co-styrene) in col.4, line 5, and styryl group is present curable functional group).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. J. L.

S. Lee
November 23, 2006

Sin F. Lee
SIN LEE
PRIMARY EXAMINER